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<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	16 same (links or hyperlinks)	9	<u>L9</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	16 same (user action)	4	<u>L8</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	16 same (without user action)	0	<u>L7</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	minimiz\$ near1 (window)	591	<u>L6</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	minimiz\$ near3 (window)	1657	<u>L5</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	minimiz\$ near4 (browser window)	1	<u>L4</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	12 same (hyperlinks or banners or advertisements)	6	<u>L3</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	(toolbar) near4 display\$	254	<u>L2</u>
USPT,PGPB,JPAB,EPAB,DWPI,TDBD	link enhancement	5	<u>L1</u>

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Generate Collection

L3: Entry 5 of 6

File: USPT

Mar 28, 2000

DOCUMENT-IDENTIFIER: US 6044205 A

TITLE: Communications system for transferring information between memories according to processes transferred with the information

DEPR:

FIG. 9 illustrates the relationships between various screens and forms produced and used by the provider program. Upon starting, an HTML page of the main menu 300 screen is generated and displayed. If the browser program 50 (FIG. 2) is not currently operating, the provider program 21 starts the browser program 50 and generates a DDE, OLE, AppleEvent, or similar operating system request to start the browser program 50 and have it display the requested HTML page. The main menu 300 screen lists various menu items which are hyperlinks to other HTML pages containing additional menus or forms. The menus and forms discussed with respect to the provider program 22 or consumer program 21 are merely illustrative of the capabilities of the system. The features and functions of the system can be organized in any order or hierarchy within the screen based menu system. Alternatively, another native interface system could provide a substantially different organization. Additionally, other functions and features can be added by creating other menus or forms and creating hyperlinks on the existing menus or forms to those new screens. Furthermore, in addition to specific menus, various choices can be implemented on toolbars displayed on one or more of these HTML pages. In order to satisfy user preferences, many menus, forms, and toolbars can be editable by the user via preference forms or even direct HTML source editing. Such preferences may allow a different default startup menu screen, different toolbars, different menu choices on any given screen, different screen fonts or backgrounds, or other display or operational preferences.

WEST

Generate Collection

L11: Entry 22 of 43

File: USPT

Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5983244 A

TITLE: Indicating when clickable image link on a hypertext image map of a computer web browser has been traversed

BSPR:

Thus, the invention is a method which, based on the history and nature of the links that have been visited, modifies the graphical image of that link to indicate that the node has been traveled before. The method marks traversed hypertext clickable image links on an image map by first retrieving a history of image links that have been traversed and then determining if the image map has been modified since last viewed. If not, then the image link is modified at or near the coordinates of the image links on the image map with a marker and the image is displayed with the marker. The method also provides for determining if the last time the image was viewed precedes a preset user timestamp, and if not, then continuing with the modification of the image link.

BSPR:

The invention includes a computer software program to traverse hypertext links, wherein the program has a means to generate an image map, the image map having clickable hypertext image links, a means to place a marker on the image map at or near the coordinate of one of the clickable hypertext image links has been traversed, and a means to display the image map having a marker. The invention also is an article of manufacture having a data storage medium tangibly embodying a program of making readable instructions executable by a digital processing apparatus to perform method steps for operating a digital computer system to mark traversed image links identified by coordinates on an image map, wherein the method comprises first, retrieving a history of image links that have been traversed and then determining if the image links have been modified since last viewed. If not, copying the image link and modifying the copied image link at or near its coordinates with a marker. The copied modified image link is then overlaid onto the original image link.

DEPR:

FIG. 3 illustrates applicable lines of code of the base document which creates the home page shown in FIGS. 1 and 2. As mentioned earlier, every web document, including this one, is written in HTML, as shown in line 310. Of particular interest to the invention is line 320. The character A 322 represents that the characters following it are an anchor for a link or another node and HREF="/cgi-bin/image map/nhome" 324 is the URL of the node. The coding in the subsequent lines 326, 328, 330 set forth the placement and words of more features of the image. The tag ISAMP 332 in line 326 is also important because it indicates that the image is an image map. An image map is a clickable image that establishes a link to the node indicated by the image by placing the cursor in a particular region in the image map. The actual physical coordinates of the image define the region with which an URL is associated. So the image portrayed in FIGS. 1 and 2 is an image map and links can be established to other locations or nodes by clicking on a particular coordinate associated with or assigned to that node. By clicking on or near the region 114 in FIG. 1 having unique coordinates on the map of FIG. 1, the user links to the node "Files" for THINKPAD.RTM. users.

DEPR:

FIG. 4 is a flowchart of the method of the invention incorporated into the web browsing software. At step 410, the base document requested by the user who entered the URL: <http://www.pc.ibm.com> is retrieved by the web browsing software and the image shown in FIGS. 1 and 2 is displayed on the computer monitor. After the base document is retrieved, steps 420 and 450 proceed simultaneously; at step 420 the web browser formulates a list of hypertext

references in the base document. This list is shown in FIG. 5. In step 450 of FIG. 4 the web browser collects the inline images referenced in the base document. Then, at step 422, the inventive method inquires for each hypertext reference in the list of FIG. 5 whether the reference is an image; and if so, correlates the hypertext reference to an entry in the image list collected in step 450. At step 424 the invention inquires if the image is a bit mapped image, which means the image itself has dimensions and a click anywhere on that image will take the user to the node attributed to those coordinates. In HTML, if the image has these qualities, it has the attribute ISMAP. The invention will only work with bit map images that are clickable; so that in HTML, the invention will only work with those images that have an ISMAP attribute. If the image does not have the attribute ISMAP, the image is printed as usual by the web browser or other commercial graphical drawing or image creation routines at step 426 and the invention herein does not function. If, however, the image is clickable and if in HTML, the image does have the ISMAP attribute, then at step 428, the coordinates and timestamps of the previous ISMAP references are tallied and collected in a graphical form of FIG. 7 from the matching URLs in the history file of FIG. 5.

DEPR:

Simultaneously, on the other branch of the process, the web browser analyzes the collected list of inline images referenced in the base document at line 450, and at step 452 collects the image data and timestamp for each image, see FIG. 7. At step 454, for each image, the invention inquires if the bit map images are clickable, and in this particular embodiment using HTML, if the image has the attribute ISMAP. If the image is not clickable, then the image is printed as usual at step 456 and the invention herein does not function.

DEPR:

If, however, the image is clickable, the two branches of the process converge at step 440, so that only those images that are: (a) in the list of hypertext references; and (b) in the list of image references; and (c) are clickable, e.g., have the attribute ISMAP, are compared. The comparison begins at step at 440(1) and for each image in the reference list, the invention determines if the bit map images have been modified since the last visit to that particular home page or base document. In other words, the image list is checked to see if the image map was modified by the owner of the document or node since it was last viewed. If so, then at 440(1) and 440(2), that reference is removed from the history file at 440(2) and the invention does not operate on these images because there is no assurance that the coordinates are the same on the modified bit map. The other inquiry in step 440(3) depends upon whether the user has specified a personal timestamp. If so, then the invention discards those references that were viewed in the past before the specified time. For example, the user may determine that she/he does not wish to have more than a two-week or thirty-day history of the nodes that she/he visited. Therefore, if the image on the history file was viewed before this maximum time, that bit map is discarded. The image is then displayed as usual by the web browser without modification. Those remaining references which are clickable, e.g., have the ISMAP attribute and which are still in vogue are then modified using the coordinates of the image by the insertion of a marker, such as a change in color on all or part of the image or a letter or other image, as will be discussed in more detail with reference to FIG. 9. With the image thus modified, the drawing or image creation routine of the web browser then draws the modified image; and the image as shown in FIG. 2 will be displayed.

DEPR:

FIG. 5 is a history 500 provided by the web browser of the nodes to which the user has linked and is the list of references reviewed in step 420 of the flowchart of FIG. 4. Each line in the history 500 represents a particular node to which the user has linked in the past. Each line, and as an example only consider line 510, has at least two entries: the URL at 512 and time/date stamp at 516. Lines 510, 520, 530, 540, 560, 570 specifically refer to the map of the links of FIGS. 1 and 2. These lines also have the C.sub.x,C.sub.y coordinates of the location of the link on the map; for instance, the x,y coordinates (457, 223) 514 might refer to the link entitled FILES 114 of FIGS. 1 and 2. It is from the list of FIG. 5 that the invention first inquires if the clickable image has been changed since last viewed.

DEPR:

FIG. 9 is a flowchart that demonstrates one embodiment of how the image map is modified by the invention. Step 900 follows from Step 440 of FIG. 4 so that only those referenced image links that have been viewed within a recent past, that are clickable, e.g., ISMAP, image maps, and that have not been changed by the originator of the document are processed further. First at Step 900, the image data of a referenced image link is copied from an address given by the pointer in column 740 of FIG. 7. Once the image data has been copied, then, at step 910, the coordinates at column 640 on FIG. 6, labelled C.sub.x,C.sub.y, of each link that has been traversed previously is used. For each of the links that have been traversed, the hotspot (h.sub.x,h.sub.y) 850 of the icon mask 810 is positioned onto or near the link coordinate C.sub.x,C.sub.y. The hotspot 850 on the icon X is its center and this center would be positioned on the coordinate of the link on the image map, C.sub.x,C.sub.y. If the icon is an arrow, such as 810 in FIG. 8b, then the apex of the arrow might be the hotspot 850 positioned on the coordinate C.sub.x,C.sub.y. Then at Step 920, for each pixel of the icon (i.sub.x,i.sub.y), Step 930 checks if the bit value of the pixel in the icon mask is one, then a change is made to the appearance at the corresponding pixel on the copy of the image map, given as C.sub.x-h.sub.x+i.sub.x, C.sub.y-h.sub.y+i.sub.y, Step 940. If, however, the bit value of the pixel on the icon mask is zero, no changes are made to those corresponding pixels on the copy of the image map as in Step 950. Then, the modified image is overlaid onto the original image and both are printed to yield the display of FIG. 2, Step 960.

DEPR:

Thus, what has been presented is a technique to modify image maps to show that a particular image link has been traversed. While the invention has been described in connection with what is presently considered the most practical and preferred embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims. HTML is used as only one embodiment because the popular web browsers are written in HTML; the invention, however, is applicable to other hypertext languages which have an image map of clickable images.

CLPR:

1. A method to mark traversed hypertext clickable image links on an image map, comprising the steps of:

CLPR:

8. A method to mark traversed hypertext clickable image links on an image map, comprising the steps of:

CLPR:

16. A method to mark traversed hypertext clickable image links each having respective coordinate on an image map having a plurality of said hypertext clickable image links, said method comprising retrieving a history of the respective coordinates and modifying the image map at or substantially near the respective coordinates that have not changed of each traversed image link on the image map.

CLPV:

(a) retrieving a history of the coordinates of at least one hypertext clickable image link on a hypertext image map having a plurality of the hypertext clickable image links, of which at least one of said image links has been traversed;

CLPV:

(a) retrieving a history of the coordinates on an image map indicating the position of at least one of said hypertext clickable image links that has been traversed, said image map having more than one hypertext clickable image links;

CLPV:

(a) means to generate an image map having a plurality of clickable hypertext image links;

CLPV:

(b) means to retrieve a history of the coordinates Of the clickable hypertext image links on the image map;

CLPV:

(c) means to place a marker on the image map at or near the coordinates of at least one of the clickable hypertext image links that has been traversed and whose coordinates have not chained; and